

## Abstract

1,3-Butadiene is polymerized in a hydrocarbon solvent using a catalyst system containing (A) a cobalt salt, (B1) a phosphine compound having one branched aliphatic group of 3 or more carbon atoms or one alicyclic group of 5 or more carbon atoms and two aromatic groups, and (C) an organic aluminum compound, or a catalyst system containing (A) a cobalt salt, (B) (B1) a phosphine compound having one branched aliphatic group of 3 or more carbon atoms or one alicyclic group of 5 or more carbon atoms and two aromatic groups and/or (B2) a triarylphosphine compound having three aromatic groups, (C) an organic aluminum compound and (D) an active halogen-containing compound, thereby obtaining crystalline 1,2-polybutadiene.